

Discussion: L&R Items 2302-5 and 2600-4 regarding Polyethylene

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There are a number of sections that may impact our understanding of both method of sale and labeling requirements for polyethylene products, namely UMSR Section 2.13, HB133 Section 4.5.

The first issue to consider is the placement of what appear to be labeling requirements for this product in the UMSR instead of the UPLR. Normally we would expect special rules regarding specific product labeling to appear in Section 10 of the UPLR with the specific consumer and non-consumer commodity requirements and we expect the method of sale to simply tell us by what units the commodity is to be sold. This is not the case here. The UMSR goes into specific detail concerning terms of sale i.e. declarations of quantity in terms of length, width, thickness and weight for sheeting and film in 2.13.1.1., and length, width, thickness, count and weight for bags in 2.13.3. Also note- that in the case of non-consumer bags in 2.13.3., the dual declarations in customary/SI units is permitted but not required.

The UMSR in 2.13.4. gives detailed explanation how to calculate the weight and present the weight declaration (applicable to all of the weight declarations for poly). In the calculation the regulation specifies “minimum” product density factors for use in converting the volume (Length x Width x Thickness) to weight for the declaration. At this point the labeled weight is compared to the target weight to verify conformance of the label to the UMSR requirements. See Step 3 of the HB133 procedure 4.5.2.

3. Use the following formulas to compute a target net weight. The labeled weight should equal or exceed the target net weight or the package is not in compliance.

There are no further uses for the target net weight calculated by the official in the testing procedures. From here the HB133 procedure goes on to specify how to verify conformance with the average requirement for the declared weight as well as the other three declared dimensions. In fact, most inspectors stop after step 11 in the procedure (see below). I think it is very rare for any inspector to get out the dead weight micrometer and do the thickness measurements. If the lot passes on net weight, and length and width, you’ve probably done enough to verify compliance.

10. Follow the procedures in Section 2.3.7. “Evaluate for Compliance” to determine the lot conformance requirements for length, width, and weight.

11. If the sample failed to meet the package requirements for any of these declarations, no further measurements are necessary. The lot fails to conform.

What’s key to understand is that compliance with the length, width, and thickness is the primary goal. If you comply there you should comply with the weight because the density factor used in conversion was by definition a minimum density and not an exact conversion factor. Because the weight is calculated as a minimum, it seems inappropriate to think of the weight as complying with the general FPLA requirement of being accurate. The accurate label in the normal HB 133 sense really only applies to the length, width and thickness.

The current language in 2.13.4. was established to create a rule of reporting three significant digits in the weight of poly products and I believe that the NCWM directly related it to HB133 test methods.

As I understand it, the current proposal arose from some confusion on the part of some officials who did not understand the rounding instructions in this section. If this is the case, let's find language that explains things better but does not change to basic requirement for the packer to provide three digits in the weight declaration. To solve this issue, I propose the following changes to the UMSR and HB133:

Amended text for Item 2302-5

2.13.4. Declaration of Weight. – The labeled statement of weight for polyethylene sheeting and film products under Sections 2.13.1.1. Sheeting and film, and 2.13.3.1. Bags, shall be equal to or greater than the weight calculated by using the formula below. The final value shall be calculated to at least four digits, and declared to three digits, dropping truncating the final digit as calculated (for example, if the calculated value is 2.078 lb, then the declared net weight shall be 2.07 lb examples, a calculated value of 2.0786 lb is truncated to 2.07 lb, a calculated value of 32.875 lb is truncated to 32.8 lb, a calculated value of 274.589 lb is truncated to 274 lb, and a calculated value of 1,257.6 lb is truncated to 1,250 lb. Note- the zero in 1,250 is only a placeholder).

Amended text for item 2600-4

4.5.2. Test Procedure

a. Test procedure for polyethylene Sheeting

1. Follow Section 2.3.1. “Define the Inspection Lot.” Use a “Category A” sampling plan in the inspection; select a random sample.
2. Be sure the product is not mislabeled. Check the label declaration to confirm that all of the declared dimensions are consistent with the required standards in NIST Handbook 130, Uniform Regulation for the Method of Sale of Commodities, Polyethylene Products. The declaration on sheeting, film, and bags shall be equal to or greater than the weight calculated by using the formulas below. Calculate the final value to at least four digits and declare to three digits, dropping truncating the final digit (e.g., if the calculated value is 2.078 lb, then the declared net weight is truncated to 2.07 lb examples, a calculated value of 2.0786 lb is truncated to 2.07 lb, a calculated value of 32.875 lb is truncated to 32.8 lb, a calculated value of 274.58 lb is truncated to 274 lb, and a calculated value of 1,257.6 lb is truncated to 1,250 lb. Note- the zero in 1,250 is only a placeholder).

It has been suggested that we remove the language on the rounding in the UMSR section 2.13.4. and simply reference UPLR section 6.13. I suggest that the UPLR requirement of 6.13 and the guidance in Appendix B do not apply. This is because these sections of the UPLR provide general rules for labeling but the current language of UMSR provides specific requirements for selling poly in 2.13.4. The rule in interpreting law is that specific takes precedence over general. Notice also that 6.13 is directed at units conversion (customary to SI) and it is assumed that accurate conversion factors (not minimums) are used in the process.

Such a proposal would change a long standing practice that was arrived at through extensive work by the NCWM and the poly industry. Any such proposal would potentially be far more than an editorial change to clear up confusion. If that is desired, I suggest the item be moved to Informational and work begun with the industry to assure we consider all unintended consequences.

From UPLR

6.13. Rounding. – In all conversions for the purpose of showing an equivalent SI or inch-pound quantity to a rounded inch-pound or SI quantity, or in calculated values to be declared in the net quantity statement, the number of significant digits retained must be such that accuracy is neither sacrificed nor exaggerated. Conversions, the proper use of significant digits, and rounding must be based on the packer's knowledge of the accuracy of the original measurement that is being converted. In no case shall rounded net contents declarations overstate a quantity; the packer may round converted values down to avoid overstating the net contents.

From UPLR Appendix B

2. Rounding and Significant Digits.

It is the packager's responsibility to round converted values appropriately and select the appropriate number of significant digits to use in quantity declaration. [These rounding rules are for converting quantity determinations on packages and do not apply to digital scales that automatically round indications to the nearest indicated value.] Conversions, the proper use of significant digits, and rounding must be based on the packer's knowledge of the accuracy of the original measurement that is being converted. For example, if a package is labeled 453.59 g (1 lb), the packer is implying that the package declaration is accurate within ± 0.005 g (or ± 5 mg). For liquid volume measure, a label declaration of 473 mL (16 fl oz) implies that the package declaration is accurate to within ± 0.5 mL (0.01 fl oz). The requirements of 6.13. Rounding apply to all quantity declarations that are derived from converted values:

6.13. Rounding. – In all conversions for the purpose of showing an equivalent SI or inch-pound quantity to a rounded inch-pound or SI quantity, or in calculated values to be declared in the net quantity statement, the number of significant digits retained must be such that accuracy is neither sacrificed nor exaggerated. Conversions, the proper use of significant digits, and rounding must be based on the packer's knowledge of the accuracy of the original measurement that is being converted. In no case shall rounded net contents declarations overstate a quantity; the packer may round converted values down to avoid overstating the net contents.

NOTE: When as a result of rounding SI or customary inch-pound declarations calculated based on the conversion factors in Appendix A, the resulting declarations are not exact, the largest declaration, whether metric or inch-pound, will be used for enforcement purposes to determine whether a package contains at least the declared amount of the product.

Do not round conversion factors or any other quantity used or determined in the calculation; only round the final quantity to the number of significant digits needed to maintain the accuracy of the original quantity. Use the rounding rules presented below in Table 1 as guidance to round the final result. In general, quantity declarations on consumer commodities should only be shown to two or three significant digits (for example, 453 g or 85 g). Any final zeros to the right of the decimal point need not be expressed. The inch-pound and SI declarations of quantity must be accurate and equivalent to each other. For example, a package bearing a net weight declaration of 2 lb (32 oz) must also include an SI declaration of 907 g.